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Practical Pharmacy Edition

Editor
GLENN SONNEDECKER

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ommittee on Publications
EORGE D. BEAL, Chairman
B. V. CHRISTENSEN
ROY B. COOK
HUGO H. SCHAEFER
E. F. KELLY

COVER: Cancerous breast tissue is shown in this microphotograph from the Army Medical Museum. The wild growth of cells has infiltrated, replaced and destroyed the normal tissue. Cancer cells are attempting to form gland-like structures (adeno carcinoma). The lumina of these neoplastic glands are seen in the photograph as white spaces. Cancer cells form the lining of these gland-like spaces. Advanced cancer, of which this is an example, can often be prevented if pharmacists and other public health workers are on the alert to direct persons with symptoms of early cancer to a competent physician (*see page 67*).

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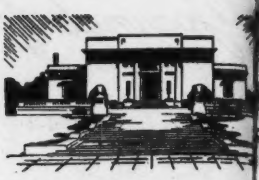

The Way I

MANY words and worries are being wasted on misunderstandings of the pharmacist's role in the war. Pharmacy, the profession, stands as solid and sound today as it has ever been these 4000 odd years of its history, although doubters question.

Is pharmacy recognized as essential in the war effort? Selective Service has deemed it essential in word and deed. The armed forces and the public consider it essential. We in the profession believe it essential.

There are those, of course, who take the other side, mumbling about merchandising mania and cut rate decadence. Somehow they have confused the operation of a drugstore with the practice of pharmacy. By them, the classic definitions of Remington and Arny are by-passed. But Selective Service has taken our two old friends at their word. When a pharmacist devotes most of his time to the preparation, storage and dispensing of drugs and to providing other health services, say the officials, he is essential on the home front. Our neighbors and relatives are fighting and dying; pharmacists cannot have, and do not want, special exemption from military service because of their title *per se*.

Uniform Criterion

But isn't it true that pharmacists are being discriminated against? The same criterion of being a necessary man is applied to pharmacy as to other professions and vocations. A pharmacist is "necessary" if he is engaged in war production or in support of the war effort; if his removal would cause a serious loss of effectiveness therein; and if he cannot be replaced. The regulations will be more liberally construed if a man is a father 22 years old or over. If other factors are equal, such fathers will normally be given occupational deferment in preference to younger fathers or nonfathers.

On this basis it is expected that less than a fifth of us will be in the armed forces even when present estimated induction demands hit their peak. Current problems of the profession are none the less real and serious, deserving thought and action by all. Let us then consider what coming months may have in store and what can be done about it.

An average of one retail pharmacist for about every 2100 persons will still be in practice by 1945. This proportion would seem to be adequate to maintain necessary pharmaceutical service. As a matter of fact it is meaningless without considering the distribution pattern. Some communities still have a multiplicity of pharmacies while other areas cannot safely spare a single pharmacist.

Selective Service will be hard pressed to meet manpower demands, and the continued heavy induction of pharmacists can be expected until at least July. All occupational deferments are now being reviewed; deferment will probably be continued only where there is a critical need for a man's services. Pharmacists under 38 years old must show that they are necessary men in their communities, and those between 21 and 26 are no longer being considered for occupational deferment. The pharmacy students are also on their way to the front, due to Selective Service regulations discussed in last month's editorial. Total pharmacy replacements for 1944 and 1945 will be cut to about 800 graduates. Thus, if 14,000—or 17%—of the prewar pharmacy population are to be in service by the end of the year as estimated, it is essential that selections be carefully made to maintain proper distribution.

Where there are several pharmacies operating in the same area, officials maintain that usually all of the pharmacists cannot spend enough time in the actual practice of pharmacy to warrant their deferment. Recognizing, however, that it is difficult for harrassed draft boards to evaluate the relative need for a particular pharmacist, state Selective Service officials are coöperating with Pharmacy Advisory Committees which most state pharmaceutical associations have now established. These committees have rendered a great service in the interests of public health and the profession. As inductions continue, their job of advising state Selective Service officials on the selection of pharmacists will be increasingly difficult and important.

We urge that the few state associations that have not established a Pharmacy Advisory Committee do so at once. It is imperative that the

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committee in each state be developed to its full stature. By so doing, pharmacy can help assure that pharmacists will be selected with the least dislocation of essential pharmaceutical service.

Selective Service officials in most areas seem to be utilizing and respecting the advice obtained from the Advisory Committees. They express satisfaction with the work of the committees to date.

There will be no Procurement and Assignment for pharmacists. At least that is the opinion of pharmacists who have been in closest touch with the government agencies involved. Even though the Advisory Committees could be converted to Procurement and Assignment Boards under the War Manpower Commission, they would function much as they do at present.

A board would determine whether, in its opinion, a pharmacist is essential in his community. If not, the board would advise the pharmacist to transfer to another pharmacy or move his pharmacy to an area where he would be a necessary man. If the pharmacist refuses, and is under 38, the Procurement and Assignment Board would then advise the local board that the pharmacist is available for induction. It is believed that similar end results would be obtained through development of the Pharmacy Advisory Committees.

Under the present system, a pharmacist should voluntarily practice where his services are believed to be essential. After consulting the local board, the proper forms should be filed which will certify his occupational status. If 1A classification is then received, and the pharmacist believes he is being inadvisedly inducted, he should appeal through the local board on the basis that his induction would interfere with service essential to the health and welfare of the community. If there is doubt about the pharmacist's occupational status, the Pharmacy Advisory Committee may then proffer, or be asked for, impartial information to help decide the case.

In some states, Pharmacy Advisory Committees and Selective Service have apparently been groping their way with only a foggy notion of the strength and distribution of pharmacy manpower. This problem can be solved—and has been in many states— by taking a pharmaceutical census. A statistical breakdown should show the location of pharmacies and pharmacists, both geographically and by age groups.

It would be a big step forward if pharmacists in every state, through their state association, would gather these statistics each year. Such a survey reveals shortages and potential shortages, and tells pharmacists where their services are most needed. Kept up to date, it would guide pharmacists returning from the war to locations where they can reënter practice with the best chance for professional opportunity.

Meanwhile, those of us remaining in civilian life will be hard pressed to provide all the usual services. Many will have to devote more of their time in the drugstore to the practice of pharmacy. Consolidation of pharmacies may be advisable in towns and neighborhoods where two pharmacists have battled each other for years for the same patronage. Some pharmacists have already found that pooling manpower and overhead expense pays dividends in better living conditions and professional success.

Hundreds of other pharmacists have no alternative but to close the doors and sell—if they can. The tragic last click of the door key impinges on the complacency of pharmacists in every branch of the profession.

Looking Ahead

What effect these trends will have on the profession and the public health is only a guess so far. But from wartime experience we should be able to discern more nearly the number of pharmacists actually needed. Perhaps we will come at last to the conclusion, as have other professions, that it takes more than unrestricted numbers to make a strong profession and to provide an ideal public service.

No matter what restrictions and sacrifices are in store, it will not be the "death knell" of the profession as alarmists would have us believe. Pharmacy will go on long after the guns have cooled, long after the present generation of pharmacists is dead. For pharmacy fills a basic need of mankind.

Practical Aspects of *Pyrogen Problems*

MODERN CONCEPTS OF PYROGEN REACTIONS FROM INTRAVENOUS MEDICATION REVIEWED, MODIFIED METHODS DEVELOPED TO DETECT AND REMOVE THE CONTAMINANTS

by CO TUI

NEW YORK UNIVERSITY COLLEGE OF MEDICINE

WHAT is pyrogen? The study of the chemical nature of pyrogen now in progress seems to associate it with the polysaccharide-bearing bacterial antigens which have been studied by various immunologists.[1, 2, 3, 4] Pyrogen gives a strong Molisch reaction; it can be hydrolyzed into reducing sugars; it is potent in minute doses and is likely not a protein.[5] These characteristics tally with those of bacterial antigens. Thus it appears that a group of related substances studied by two different groups of investigators from two entirely different points of view has assumed two distinct identities, when, in all likelihood, they may be closely related.

It is quite possible that pyrogenic reactions occur in nature. In fact, it is an intriguing theory to attribute the chill and fever associated with infections to pyrogen suddenly released into the blood stream from a focus of bacterial growth. But it was not until the advent of intravenous medication that artificially induced pyrogenic reactions were encountered. These were formerly, and are still, called foreign protein reactions,[6] although the possibility of pyrogen being a protein appears less and less likely as the chemical study of pyrogen proceeds.

The occurrence of chills and fever of a few hours' duration following injections of salvarsan solutions, led Wechselman,[7] in 1911, to the discovery that when freshly distilled water was used for making the solutions, the incidence of such reactions became markedly reduced.

To Hort and Penfold[8] belongs the credit of showing, in 1911, that if distilled water is kept in sterile vessels, no febrile reactions occur upon injection while incubation of the same water for 48 hours in unsterile vessels leads to reactions. They also showed that the fever-producing principle was soluble and passed through a Berkfeld filter which holds back the bacterial bodies. Seibert, in 1923–1926, in a series of papers[9, 10, 11] amplifying the work of Hort and Penfold showed conclusively the bacterial origin of pyrogen, identified a group of water microorganisms as the causative agents in pyrogen production and showed that stills could often be a source of pyrogen contamination. She also introduced the rabbit test which has been adopted almost universally by manufacturers and in modified form by the U. S. Pharmacopœia.[12] Seibert also began some work on the immunological aspects of pyrogen which demonstrated the potency of the material.[13]

It is on the important work of Seibert that most of the present pharmaceutical practices connected with intravenous medication have been built. The central principle has been emphasis on the purity of water. Even the work of Rademaker[14] and the more recent mechanically ingenious installations of Walter[15] have been built around this principle.

Unfortunately, some misimpressions have arisen out of the work of Seibert. The first one I have already mentioned, namely, that water is the only source of pyrogen. This has led to elaborate methods of keeping the water pyrogen-

From the Laboratory of Experimental Surgery, Dept. of Surgery, N.Y.U. College of Medicine. Under grants from New York Foundation and Eli Lilly Co. Presented to Scientific Session, American Pharmaceutical Manufacturers' Association meeting, December, 1943.

free, by double to triple distillations. Here it must be categorically stated that a triple still not cleaned periodically is no safer than a single still.

The second wrong impression is that pyrogenicity is an absolute and not a relative problem and has led to fixed dosages in pyrogen tests. The third incorrect impression is that only the water organisms studied by Seibert produce pyrogen. This has led to the neglect of other sources of pyrogen contamination.

The above summary brings the state of knowledge to our own work. Our findings so far may be summarized, briefly, as follows:

1. The demonstration that many species of bacteria, among them common contaminants and perhaps molds, produce pyrogen.[16]
2. That chemicals are often contaminated with pyrogen.[17]
3. A more intimate posological study of pyrogen which has made available a better mathematical basis of pyrogen knowledge.
4. That pyrogen can be removed by adsorptive filtration through compressed asbestos pads.[18]

Let us now examine the practical implications of these points.

Point 1: That pyrogen production is not limited to the water bacteria, but that, in fact, most of the bacteria studied, among them aerial contaminants, produce pyrogen, implies the realization that, wherever bacteria grow, pyrogen production is to be expected. Therefore, just as the surgeon must develop aseptic habits in his operative work, so must the pharmacist in manufacturing intravenous medicaments develop the habit of aseptic precautions as "second nature."

Chemicals Contaminated

Point 2: That chemicals are often contaminated with pyrogen needs a little amplification. This signifies, in the first place, that guarding the purity of water alone does not solve the pyrogen problem. Contamination of chemicals can come from two sources. One source is the incorporation of pyrogen into the crystals, perhaps by surface adsorption as they are formed in a watery medium contaminated with pyrogen. This may be the most likely way in which inorganic medicaments become pyrogenated. The other way, which applies particularly to organic chemicals, is for the compound to serve as a medium of bacterial growth. This occurs even in the so-called dry state, although being hygroscopic and having water of crystallization may play a part. As a rule, the richer the compound for bacterial growth, the more rapid and the greater the amount of pyrogen production. Thus we have found that dextrose, sodium citrate, inulin, heparin and amino acids develop pyrogen in ascending order. Amino acids in the ordinary dry state may develop pyrogenicity in 24 hours when exposed at room temperature. In solutions, amino acids may become pyrogenic in 6 to 8 hours. In the icebox this development may be delayed for 12 hours. On the other hand, distilled water is a poor medium for pyrogen production. It is rare to find distilled water, originally pyrogen-free, becoming pyrogenic in 25-cc. doses in men. Even the most highly contaminated tap water under summer conditions does not cause reaction in man in 5- to 10-cc. doses.

Dosage Studies

Point 3: Dosage studies are embodied in Tables I and II. Most of the work has been done with purified pyrogen made from highly concentrated vaccines of *B. typhosus*, *B. subtilis* and *Proteus vulgaris*. The method of preparation has been described elsewhere.[17] This purified substance is highly potent, active in microgram doses. This makes gross tests such as the so-called Carter test, using the decolorization of $KMnO_4$ as indicating the presence of pyrogen, impractical. While it is true that $KMnO_4$ will decolorize in the presence of organic matter, pyrogen in sufficient quantity to cause a severe reaction may not be sufficient to decolorize the $KMnO_4$ used in the test. This also holds true for the electrical conductivity test. It is this great potency in minute doses which makes animal tests necessary.

We have defined the maximum pyrogenic dose (M.P.D.) as that dose per kilogram of test animal which upon intravenous injection will provoke a temperature response of 0.5 to 0.6° C. within four hours. It will be seen from Table I that the M.P.D. in the rabbit of the pyrogen of *B. typhosus* is 0.06, that of *B. subtilus* 0.08 and of *Proteus vulgaris* 0.012 microgram (γ).

This makes man twice as sensitive as rabbits for typhoid pyrogen, while the reverse relationship holds for pyrogen from *Proteus vulgaris*.

TABLE I—COMPARATIVE MPD OF THREE PYROGENS

Pyrogen	*Rabbit, γ/Kg.*	*Man, γ/Kg.*
Typhoid	0.06	0.03
B. subtilis	0.08	...
P. vulgaris	0.012	0.06
M.L.D.	190	...
Near lethal dose	.....	15

Table II shows the differences in temperature response to doses of pyrogen (*Proteus vulgaris*) ranging from M.P.D. to 4 × M.P.D. Another point of interest is that the spread between the M.P.D. and the near lethal dose of typhoid pyrogen in the one human subject on record is 500.

The present official Pharmacopœial test: The merits of the present Pharmacopœial test[12] may now be appraised in the light of the above findings. The test was devised as a result of painstaking, collaborative study between the laboratories of 14 manufacturers and those of the Food and Drug Administration,[18, 19] with the participation of the National Institute of Health and a number of commercial laboratories using the pyrogen of *Pseudomonas aeruginosa* as representative pyrogen. The test volume-dose is fixed at 10 cc. per kilogram of rabbit. Five animals are used in one test. If equivocal results are obtained in this first test, a second test is run on another series of rabbits.

It must be stated at the start that the adoption of the test was a milestone in the history of drug manufacture; that it was a step which needed to be taken; and that it was taken after the most careful and painstaking study. Its adoption not only established standards of handling in the manufacture of intravenous medication, but also aroused wide interest in the further study of pyrogen. The authors of this test would be the last to claim finality for it and the first to welcome any modification in the light of newer facts on pyrogen. It is in this spirit that the following analysis of the test is made.

Medications Safer

Assuming that the response provoked by the pyrogen of *B. typhosus* in one single human case may be taken as representative of that of all other pyrogens, the Pharmacopœial test has already achieved one thing: It has ruled out the possibility of lethal or near lethal pyrogenic reactions in fluids tested accordingly. It will be seen from Table I that the spread between the M.P.D. and the near lethal dose is 500 times. Granting that a dose just subdetectable to the rabbit is given to man (*i. e.*, containing 0.05 microgram per 10 cc.), to achieve the near lethal dose of 15 micrograms per kilogram would require the infusion of 30 L. per kilogram, or a fantastic total of 1800 L. in a 60 Kg., man!

Defects of Test

However, attention must be called to a number of assumptions which have been made in adopting this test—assumptions which were entirely justified in the light of the state of knowledge of pyrogen at the time when the test was adopted. In the first place, the use of 5 rabbits for one test implies a lack of confidence in the reality of pyrogenic reactions. While it is true that the response to a M.P.D. may leave one in doubt, yet a real pyrogenic response, one that is produced by, say, 4 M.P.D. or over, is usually unmistakable. A reference to Table II will show the truth of this statement. Secondly, basing the test on pyrogen from only one source assumes that all pyrogens act with the same potency in men and in test animals. And finally, the use of a fixed dose of 10 cc. implies a neglect of the variations in the dosage factor in therapeutics. These assumptions can become real defects under some combinations of circumstances.

Suppose an infusion fluid containing 0.05 γ of pyrogen per 10 cc. were tested as prescribed in the Pharmacopœia. In the rabbit this would give rise to no significant temperature rise, since this dose is subpyrogenic. However, this dose is 1.7 times the M.P.D. in man in whom the injection

TABLE II—EFFECTS OF MPD TO 4 × MPD OF *P. Vulgaris* PYROGEN ON MEN

Subject	*Dose, γ/Kg.*	*Initial Temp., ° C.*	*Max. Temp., ° C.*	*Temp. Increase, ° C.*
Man	0.06	37	37.5	0.5
Man	0.06	36.7	37.3	0.6
Man	0.12	36.5	37.5	1
Man	0.12	36.7	37.9	1.1
Man	0.24	37.2	38.9	1.7
Man	0.24	36.8	38.4	1.6

of the same relative volume would give a temperature rise of between 0.5 to, say, 1° C., which would be a relatively mild reaction. But if instead of receiving 10 cc. per kilogram, the patient received 30 to 50 cc. per kilogram, as would more likely be the case, then he has received from 5 to 8 times his M.P.D. and the fever would go as high as 3 to 4° C. above normal, accompanied by a severe chill.

While the fixed 10-cc. dose makes the test somewhat inadequate for infusion fluids, it is unnecessarily clumsy for medicaments given therapeutically in smaller volumes. To give 10 cc. per kilogram into 5, 3-kilogram rabbits means giving 150 cc. Where a repeat test is indicated, a total of 300 cc. will have to be used. This does not make for economy. Moreover, to discard a medicament which would be given to man in, say, 5-cc. doses, when found mildly pyrogenic on the basis of a 10 cc. per kilogram test doses in the rabbit, is unnecessarily wasteful.

Improved Method

Suggested modification: In view of the above weakness, the following modification is suggested. Instead of using the fixed dose of 10 cc. the test volume injected is to be calculated on a per kilogram basis according to the maximum dose given in man, also on a per kilogram basis. Three rabbits are to be given this calculated dose while a fourth and a fifth rabbit, respectively, are given two and four times that dose. Four possible results may be expected: (1) All five rabbits show a maximum response. This would mean that the pyrogen content of the sample is so high as to reach ceiling effect. (2) All five are negative; in which case the negative results of 1, 2, and 3 are reinforced by that of rabbits 4 and 5. (3) Rabbits 1, 2 and 3 show a borderline response, while rabbits 4 and 5 show an unmistakable response. This would indicate a moderate amount of pyrogen in the sample. (4) Rabbits 1, 2 and 3 are negative, while 4 and 5 are positive; in which case, pyrogen would be present in traces.

The above modification is proposed as being more quantitative than the official Pharmacopoeial test. While in the case of infusion fluids the technique is more complicated, with intravenous medicaments given in smaller quantities which comprise the majority of intravenous medicaments, it is simpler.

However, just as the official test is tentative, so must this modification remain tentative until a more extensive comparative study of pyrogen from different bacterial sources can be made. The assumption made in this modification is that man will be at most only 4 times more sensitive than rabbits. If future work should discover a pyrogen to which man is, say, ten times more sensitive, then adequately to test for the pyrogenicity of medicaments which have to be given in large volumes would be almost a physical impossibility.

Another problem which naturally arises is: How can pyrogens be destroyed or removed?

Chemical methods: Pyrogen can be rendered inactive by heating with $N/10$ NaOH for half an hour. It can also be destroyed by strong acid, but in a solution of *p*H as low as 4, it can be preserved for months. It can also be destroyed by prolonged heating. However, none of these chemical and physical methods can be of much use in most intravenous medicaments.

Adsorption: Pyrogen can be adsorbed by all the adsorbents we have studied, *i. e.*, charcoal, kaolin, powdered aluminum. But the quantity adsorbed by these substances in our experience is always a matter of doubt.

The most effective adsorbent that we have found is the compressed asbestos, pyrogen-retentive pad as manufactured to our specifications by the Ertel Engineering Company of New York City. As originally calibrated, one square centimeter of the pad removes 100 M.P.D. of typhoid pyrogen. A process of manufacturing non-pyrogenic infusion fluids and distilled water has been devised based on the use of this pad.[17] However, in its use, it is necessary to take into consideration the mathematical fact that the process of adsorption is a finite one and that the retentiveness can be exhausted by overtaxing its limits.

Pretest Unknowns

We therefore recommend that an unknown fluid containing pyrogen be pretested for its pyrogen titer. By a series of dilutions, the fluid can be made to contain approximately one M.P.D. per unit volume. When this is determined, it becomes a simple matter to calculate how much is required to filter out the pyrogen in a given solution. This area is then multiplied by two to determine the final area to be used, giving the process a 100% margin of safety. Thus, if 1 L. of an unknown fluid has been shown by pretesting to contain, say, 5 M.P.D. per cc. to filter out, the 5000 M.P.D. contained in the total volume would

require 50 sq. cm.— or, stated in the converse way, the amount of pyrogen present in the sample would exhaust the adsorptiveness of 50 sq. cm. of the pad.

By adding another 50 sq. cm. as a factor of safety, the pad needed would be approximately 10 cm. square. A fluid containing this titer of pyrogen is a heavily contaminated one and almost certainly no distilled water or even tap water in summer has this high content. For practical purposes then, the process of filtering through a pyrogen-retentive pad is a practical and safe one. However, it must be warned that only in crystalloid solutions can pyrogen be filtered out with such efficiency. In the presence of colloids, the pad loses a great deal of efficiency—how much remains to be determined.

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MAJ. ARTHUR EINBECK TO HEAD COMMITTEE

MAJ. ARTHUR EINBECK, retail pharmacist and president of the West New York Health Department, has accepted the chairmanship of the Joint Committee on the Status of Pharmacists in Government Service. The Joint committee, organized by the AMERICAN PHARMACEUTICAL ASSOCIATION, includes representation from the National Association of Retail Druggists, National Association of Boards of Pharmacy and American Association of Colleges of Pharmacy. Although many advances have been made in recent years to extend the services and opportunities of pharmacists in the various government branches, the committee is currently engaged in several activities that should further improve pharmaceutical service and the status of pharmacy, both in war activities and peacetime practice.

Plans are under way to obtain an organization in the Navy which would strengthen its pharmaceutical service. This could be done through a group somewhat similar to the Pharmacy Corps in the Army. Meanwhile, efforts are being made to extend the usefulness of the new Pharmacy Corps and to coöperate with the military in its organization.

Maj. Einbeck, the new committee chairman, was one of those selected to submit a statement at the hearing on the Pharmacy Corps bill and is well acquainted with the work that has been carried on in recent years by the committee.

A graduate of the New Jersey College of Pharmacy, Maj. Einbeck became registered in New Jersey in 1914. He enlisted in the Regular Army in 1917 and served as a medical sergeant both in this country and overseas. After the war Maj. Einbeck remained in the Army, working up from the ranks through various assignments in the Medical Department. In 1941 he was promoted to his present rank of major and transferred to the Inactive Reserve because of physical disability.

In civilian life the committee chairman is a practicing pharmacist and the owner of the Einbeck Pharmacy established in 1894 by his father. He has been a leader in many professional and civic activities, serving as president of the West New York Health Department, president of the West New York Board of Trade, president of the Hudson County Retail Druggist Association, and chairman of the Pharmacy Corps Committee of the New Jersey Pharmaceutical Association.

Dr. H. Evert Kendig, whom Maj. Einbeck replaces, has consented to serve as advisory chairman. Other members of the Committee on the Status of Pharmacists in Government Service are B. T. Fairchild, Frank L. McCartney, Hugh P. Beirne, Roger W. Lusby, George H. Frates, A. L. I. Winne, R. L. Swain, C. H. Bohrer, C. H. Rogers, D. R. B. Johnson and Henry S. Johnson.

PROVIDING HOSPITAL SUPPLY SERVICE

by JOHN EDWIN SMITH, Chief Pharmacist
ROYAL JUBILEE HOSPITAL, VICTORIA, B. C., CANADA

HOSPITAL EFFICIENCY IMPROVED BY PHARMACY HAVING CONTROL OF ALL PROFESSIONAL SUPPLIES

VALUE of a complete pharmacy service in the hospital has only recently been fully appreciated and every hospital pharmacist should find it worth while to analyze his own department for means of extending its service. "Pharmacy service" is a broad term covering pharmaceutical information, service and supply. Dr. Malcolm T. MacEachern, author of *Five Principles of an Adequate Pharmacy Service,* states that one of the chief duties of the pharmacy committee of a hospital is "to supervise the purchase and issuance of drugs, chemicals, pharmaceutical preparations, biologicals and professional supplies within the hospital."

This paper deals mainly with the classification "professional supplies." I interpret this to mean all medical and surgical supplies, a field not considered to be part of the pharmacy service in many hospitals. The pharmacist's role in this connection is further illustrated by Dr. Austin E. Smith in his paper, "The Hospital Pharmacy," which recently appeared in the *Journal of the American Medical Association.* In it he states that "as one of the most frequently consulted therapeutic departments, it (the hospital pharmacy) is in intimate relation with the hospital administrators, attending physicians and nursing staff." Two points stand out in Dr. Smith's description of the hospital pharmacy. First, the term "therapeutic department," for too frequently the pharmacy is considered little more than a supply department for pharmaceutical specialties. A progressive pharmacist can do more than any other member of the staff in influencing the practice of rational drug therapy.

The second point is the relationship between the pharmacist and the administrators, physicians and nurses. These associations, together with the pharmacist's professional training and business experience, qualify the pharmacist to act as liaison officer between these groups in matters pertaining to the purchase, use and control of drugs and other professional supplies.

The additional service of controlling the nonpharmaceutical professional supplies can be furnished in several different ways. The size of the hospital and its type of administrative system are the chief factors governing the extent to which the pharmacist may act in this greater capacity.

Additional pharmacy work will immediately suggest the problem of a larger staff for the department. Expansion of the hospital pharmacy to include the service outlined may well justify the appointment of an extra graduate

Presented before the American Society of Hospital Pharmacists, A. Ph. A., Columbus meeting, 1943.

assistant. The host of hospital pharmacists who have worked alone during the past few years will appreciate the advantages that would be derived from this step in time of emergencies, during peak periods of dispensing, or when the chief pharmacist must be absent. Increasing personnel is a serious problem everywhere at the present time, but an additional pharmacist may ultimately mean fewer employees to supply the same service, due to combining departments under one management.

The first method of utilizing such a plan is by operating a complete pharmacy and central supply—including treatment tray service—a sone department. This should be the most efficient in the smaller hospitals, up to about 150-bed capacity, where one pharmacist can personally attend to most of the work; or in the larger hospitals of 500 beds or more, where the full time of the chief pharmacist can be occupied by administrative duties only.

For hospitals of a size between these figures, a second method, which has been used in The Royal Jubilee Hospital in Victoria, B. C., for some years, should prove quite satisfactory. This plan, which has grown with the hospital to its present 450 bed capacity, is essentially a compromise between the pharmacy devoted solely to drugs, and the complete central supply service. Under this system, all drugs, chemicals and routine professional supplies are purchased and, in most cases, issued by the pharmacy. The few supplies issued elsewhere are the heavier dressings and sundries handled by the general storeroom, which is conveniently located next to the pharmacy and pharmacy storeroom.

Varied Stock

A list of a few of the items stocked will give a more complete picture of these additional supplies, which, in some instances, are also kept in repair by the pharmacy department. Drugs and pharmaceuticals naturally constitute the most varied and important item on the list, but following closely in the same general classification are X-ray and diagnostic chemicals, laboratory reagents and some detergent chemicals. Dressings of all kinds are an important item, and their control presents many problems, especially in these times of material shortages, delivery delays and waste prevention.

Sundries include standard surgical instruments, suture materials, hypodermic syringes and needles, thermometers and other medical glassware, diagnostic instruments such as manometers and stethoscopes, anaesthetic gases, oxygen therapy equipment, and hospital rubber goods.

These dressings and sundries are usually issued to the nursing units in the same form that they are received by the pharmacy, although we expect to establish a central supply service as soon as conditions permit, then supplying many of the articles in completely assembled units ready for use.

Periodic Inspection

An essential part of this system is a periodical routine inspection by the chief pharmacist of all ward stock supplies coming under his control. This prevents undue accumulation in some sections of the hospital and possible famine in others, especially important now when so many items can be obtained in quantities sufficient only for minimum needs. This inspection can also prevent wastage from improper storage or overstocking of perishable articles.

The third method by which the pharmacist may assist in the control of nondrug supplies, even where an efficient central supply service is already in operation, is by acting in an advisory capacity without handling the actual supplies. In this way he can frequently advise the purchasing agent on quality, durability or composition. After physical or chemical tests, for example, the pharmacist may suggest a simple, inexpensive detergent chemical in place of a costly equivalent sold under a proprietary name. Or conversely, he may prove that the purchase of a nationally known brand, although apparently more expensive, is worth the extra cost. These examples may be multiplied manyfold as chemicals in some form are used in every department of the hospital.

Under this plan the pharmacist is occasionally in a position to advise the purchasing office or storekeeper regarding trends in treatment technique, knowledge which might avoid purchases that will later become dead stock.

The next few years will bring many changes in the methods of prevention and treatment of sickness. Whether these changes will be brought about by the natural trends of medical progress, by social legislation, or both, it will possibly

bring greater opportunities for hospital pharmacy than for any other branch of the profession. Extra services which hospital pharmacists can perform will go far in assuring that the future pharmacy will assume its full stature in American institutions.

As Health Advisers

PHARMACISTS AID CANCER CONTROL

by J. LOUIS NEFF, Executive Director
AMERICAN SOCIETY FOR THE CONTROL OF CANCER

USE OF LEAFLETS AND EXHIBITS DURING CANCER CONTROL MONTH EMPHASIZES PHARMACIST'S ROLE IN PROMOTING PUBLIC HEALTH

THE AMERICAN pharmacist occupies a position of unique responsibility and unusual opportunity in the health resources of the nation. In most communities the "corner drugstore" becomes the unofficial health center of the neighborhood and the pharmacist is looked upon as the health adviser and guide of many of his patrons. How well he serves as adviser and guide determines to no small degree the success he attains in his profession. That is his opportunity.

It is a universal human weakness to want to experiment, and most people are willing to experiment even with their most priceless possession—their own bodies and their own health. A person with some vague ache or pain or some body discomfort is most apt to try this or try that and wait to see if it goes away. He is also proud of his ability to decide for himself what is the matter with him and to plan his own treatment on the basis of that self-made diagnosis. And this creates the pharmacist's responsibility.

The modern pharmacist is a well-trained professional man with a broad background of the basic sciences. He is not trained to make diagnoses nor to treat disease, but he is in a much better position than are his patrons to determine the importance of symptoms and the difficulty of making a diagnosis. He knows better than they do that self-medication is dangerous because it results in delaying correct treatment and might well result in some trivial illness going on to produce a serious condition before a physician has had an opportunity to make a correct diagnosis and prescribe the appropriate treatment. Hence when a customer comes into the pharmacy and says: "Doc, I've been having a little indigestion the last couple of weeks. I've got a little pain in my heart; what should I take for it?" the pharmacist who is alert to his opportunity and his responsibility as a member of the nation's public health facilities will pause for a moment and ask himself whether his reply should not be: "Have you seen a doctor about it?"

Cancer is a disease which kills more people than any other cause except heart disease. This year, in the United States, close to 170,000 people will die of cancer. Yet some forms of cancer are highly curable when treated in time. It is estimated that from one-third to one-half of the people who have cancer could be saved if their disease could be treated properly as soon as it could be discovered. Unfortunately, pain is usually a late symptom so the cancer patient is not driven to seek medical advice at an early stage of the disease Early diagnosis depends upon the recognition of symptoms which might be vague and uncertain and which might be confused with many conditions other than cancer; it seldom can be made without the help of the laboratory, the pathologist and perhaps the roentgenologist. Yet early diagnosis is essential if we are to cure many of the cancer patients.

The American Society for the Control of Cancer and its Women's Field Army of volunteer workers is engaged in the task of educating the people to recognize the danger signals which might mean cancer and to seek medical advice at the first evidence of any of these warnings. It

must always be remembered that each of these danger signals might be caused by any one of a number of conditions, but among the many possible explanations we must include cancer. We do not want to frighten people but rather to make them understand that the presence of a danger signal means that *something* is wrong which should be investigated in case it *might* prove to be cancer.

Danger Signals

The following are the danger signals we are trying to teach the people and a brief explanation of their possible significance:

Any Persistent Lump or Thickening, Especially of the Breast.—Cancer of the breast is a very important type of cancer not only because it attacks so many women but also because *early* cancer of the breast can be treated very successfully. Not every lump in the breast is cancer. Fortunately most such lumps are not cancer at all, but since *some* of the lumps are cancer, *all* of the lumps should be investigated by a competent physician with the help of a pathologist. A thickening or "dimpling" of the skin of the breast, a retraction or elevation of the nipple, or a blood-stained discharge also demand an immediate investigation since these signs also might mean cancer. Similar lumps or thickenings in other parts of the body should likewise be investigated.

Any Irregular Bleeding or Discharge from Any of the Body Openings.—Blood, or a bloody discharge from some natural body opening, is a common symptom and its presence is too frequently ignored. Blood in the urine is usually investigated as soon as it is discovered because it is frightening, but blood from the rectum is usually tolerated because the patient will decide he has "piles." It is stated that more than half the patients with cancer of the rectum will tell the surgeon that they have been treating themselves for hemorrhoids, sometimes for many months, before they sought medical advice. *Early* cancer of the rectum is frequently curable; late cancer of the rectum presents a pretty grim picture. So the pharmacist who is alert to his public health responsibilities will think twice before he sells salve or suppositories to a person who has made his own diagnosis, without first urging the patient to have a careful examination by a competent physician.

Bleeding and blood-stained discharge from the vagina may be early signs of cancer of the cervix or of the body of the uterus. Too often these early signs are ignored because they are confused with the menstrual phenomenon. Any irregular or unusual bleeding from the vagina, particularly during or following the menopause, should be carefully investigated. The spitting of blood or a bloody discharge from the nose or ear means trouble, and the trouble should be corrected.

Any Sore That Does Not Heal, Particularly about the Tongue, Mouth or Lips.—Not every persistent sore is a cancer, of course, but cancer of the skin, of the lip, tongue or mouth usually starts as a thickening of the surface. Perhaps the skin will have a scaly appearance; if within the mouth it might show up as a white patch. The area then becomes sore and refuses to heal. Any persistent sore should be studied.

Sudden, Persistent Indigestion.—All of us are subject to a certain amount of "indigestion," particularly following some dietary indiscretion or excess, but, in general, a person of middle age, who always has been able to "eat everything" does not suddenly develop a persistent indigestion without some underlying cause. One of the possible causes is cancer. Such patients should secure an accurate diagnosis before they continue self-treatment too long.

Sudden Changes in the Form or Rate of Growth of a Mole or Wart.—Most people have moles, "birth marks" or warty growths somewhere on their bodies. It would be well-nigh impossible to have all such blemishes removed, but they should be watched. Every so often one of these things will start to change, particularly if it has been subjected to repeated irritation as from shaving, the scraping of a stiff collar, a spectacle frame, or a tight hat. It might get sore, or it might start to grow, or to get darker in color. Then is when the patient needs help, for if neglected that condition might go on to produce cancer.

To these commonly advertised "danger signals" might be added two more: *persistent hoarseness* and *constipation*. A persistent, unexplained hoarseness might mean cancer of the throat; a sudden change in the normal bowel habits, either unusual constipation or constipation alternating with diarrhea, might be caused by an early malignancy.

What To Do

This brief discussion will serve to indicate the complexity of the cancer problem and the difficulty of the attempts to control the disease. It is obvious that all of the symptoms discussed are fairly frequent in their occurrence and that each of them might be caused by some perfectly simple thing and not by cancer. Yet early cancer can only be found by careful investigation of these rather vague and indefinite warnings. Certainly

we do not want to frighten people to death by making them feel that every little variation from their normal good health is a sign that they have cancer, yet early cancer is usually first evidenced by just such little variations from normal function and normal conditions. How should we proceed?

We can all agree that it is a sound public health policy to suggest that people keep well by attending to early symptoms rather than by waiting until a disabling illness drives them to the doctor or the hospital. This advice is sound whether we suspect the possibility of tuberculosis, pneumonia, kidney disease, diabetes, heart trouble, or any other serious condition. It is just as sound when there is a possibility of cancer.

The pharmacist in his role of neighborhood health adviser can promote the health of the community and add to his professional reputation by urging that his patrons pay serious attention to the apparently trivial danger signals which might mean serious trouble if neglected.

By act of Congress, April has been designated as Cancer Control Month. During this month the American Society for the Control of Cancer and its Women's Field Army redouble their efforts to educate the public. We are grateful for the opportunity given us by THIS JOURNAL to call this fact to the attention of pharmacists and to urge that they coöperate in this lifesaving effort. We suggest that you get in touch with your nearest branch of the Field Army. If you do not know where to find these volunteer workers write to the American Society for the Control of Cancer at 350 Madison Avenue, New York 17, N. Y. Perhaps you can help them distribute leaflets or other educational material. Perhaps you can display posters or an exhibit. Certainly you can make a special effort during April to remember that early cancer can often be cured and to share that knowledge with those with whom you come in contact.

Fear, Ignorance and Delay are the allies of Cancer and Death. Let us help with this national effort to

FIGHT CANCER WITH KNOWLEDGE

PHARMACISTS INCLUDED IN NEW ARMY PLAN

GREATER use of the knowledge and experience of some pharmacists in the Army is expected to result from a new program for training enlisted men to replace physicians as assistant battalion surgeons. A considerable number of pharmacists, together with men who have a somewhat similar civilian background or have received Army medical technical training, have just completed the special training course at the School for Medical Administrative Corps Officers at Camp Barkeley, Texas. Other classes of prospective assistant battalion surgeons are scheduled to begin the training soon.

An assistant battalion surgeon conducts emergency work, such as administering plasma, checking hemorrhage, treating slight wounds, and supervising the quick evacuation of the seriously wounded to the rear. This work is conducted at the battalion aid station a few hundred yards to the rear of the battalion it supports. The assistant battalion surgeon has charge of the station under the battalion surgeon's command.

By training pharmacists, and others with a suitable background, as assistant battalion surgeons the medical officers now in these posts can be used where their full professional capabilities can be more fully utilized.

The school at Camp Barkeley is reported to be the first of its kind designed to train officers specifically for this work. The studies include anatomy and physiology, bandaging and dressing, splints and emergency treatment. Miscellaneous hours will cover transportation of casualties, immunization, transfusions, chemotherapy and penicillin, tropical diseases and the care of psychiatric casualties. Other subjects include sanitation and tactics, with shorter periods devoted to logistics and administration.

The course is being treated practically with as much application as possible.

PROFESSIONAL PROBLEMS OF PHARMACISTS ANSWERED. BOARD OF 11 PHARMACEUTICAL SPECIALISTS AND A. PH. A. LIBRARY AND LABORATORY FACILITIES AVAILABLE TO OUR READERS. SEND QUERIES DIRECTLY TO PRACTICAL PHARMACY EDITION GIVING ALL PERTINENT INFORMATION

PREVENTING COAL TAR FLECKS

How can I incorporate two per cent coal tar into an ointment base of the formula given below without getting fine flecks of tar in the finished product?

Stearic Acid	40
Lanolin	20
Melt, mix and add mixture of	
Triethanolamine	2.7
Water	120
Mix and add	
Carbitol or Glycerin	18
Terpineol	0.1

Should hydrous or anhydrous lanolin be used?—W. C., New York.

Satisfactory dispersal of the coal tar was obtained in our laboratory by the method given below, but the product tends to liquefy on long standing. Some experimentation indicated that the following changes in the formula will give the most satisfactory product: (1) Add beeswax, 1% of total weight. (2) Reduce the water content from 120 cc. to 80 cc. (3) Hydrous lanolin is usually used unless the anhydrous form is specified, but anhydrous lanolin would be preferable in this formula to reduce further the water content. The consistency can be adjusted to individual preferences by a little experimenting with the amount of beeswax and water used.

The triethanolamine, water and glycerin are warmed together on a water bath to about 65° C. The stearic acid, lanolin and beeswax are heated together on a water bath until molten and well mixed. Then add the oil phase to the aqueous phase with stirring; incorporate the terpineol last. Agitation is continued during cooling until the base congeals. Using a spatula and pill tile, gradually incorporate the coal tar into the ointment base.

DENTURE CLEANER FORMULA

What formula do you recommend for preparing a denture cleaner?—A. R., Oregon.

The *Pharmaceutical Recipe Book III* gives the following formula:

Precipitated Calcium Carbonate	775 Gm.
Heavy Magnesium Carbonate	192 Gm.
Sodium Metasilicate, in fine powder	13 Gm.
Sodium Lauryl Sulfate	20 Gm.
To make	1000 Gm.

Mix the powders.

For use, prepare a paste with water and brush thoroughly. Rinse well with water.

Dentures made of synthetic resins, such as the phenol-formaldehyde type, withstand most chemical cleaning agents. Those containing esters, such as cellulose acetate, are decomposed by alkaline substances. A cleaner for "ester type" dentures can be prepared as follows:

Calcium Carbonate	75 Gm.
Triisopropanolamine	250 Gm.
Water, a sufficient quantity to make a paste.	

Apply the paste and brush thoroughly. Rinse well with water.

ARGYROL INCOMPATIBLE

We have received this prescription in which there is an obvious incompatibility between the silver salt and the hydrochloride:

Cocain hydrochloride	½%
Argyrol	10% f℥i

Sig: gtt.iii in each nostril t.i.d.

The writer, a specialist, is inaccessible. Should the preparation be filtered, or not dispensed at all?—R. B., Pennsylvania.

The cocain hydrochloride might be replaced with cocain nitrate. Preference is usually shown, however, for dispensing preparations of the argyrol type without the addition of any further ingredients. In other words, a ½% solution of cocain hydrochloride could be used to shrink the nasal mucosa, and this in turn followed by argyrol—a procedure generally followed in office practice. If the prescription is filled as rendered, filtering would not be advisable since the formation of a silver chloride might still be of some use. If the preparation were filtered there would be considerable question as to the constitution of the resulting filtrate.

CREAM USED FOR DRY SKIN

Can you suggest a working formula for a non-greasy hand cream, using an emollient such as lanolin, that would be helpful in our extremely dry climate?—C. W., Texas.

The following formula from de Navarre's *The Chemistry and Manufacture of Cosmetics* is nicely suited for dry skin. If the cream is too stiff for your needs, the stearic acid content can be reduced and the water increased proportionately.

Stearic acid	25 parts
Lanolin	4 parts
Triethanolamine	1.35 parts
Carbitol	9 parts
Water	60.65 parts
Perfume, *q. s.*	

Melt the fats over a water bath, and heat them to a temperature of 85° C. Separately dissolve

THESE MEN SERVE YOU AS THE PRESCRIPTION INFORMATION BOARD

LOUIS FISCHER
University of Washington College of Pharmacy

ROBERT FUQUA
Johns Hopkins Hospital

MELVIN W. GREEN
Laboratory of the American Pharmaceutical Association

FRANK N. McGINNIS
University of Pittsburgh College of Pharmacy and Falk Clinic

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Temple University School of Pharmacy and consulting pharmacologist

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University of Illinois College of Pharmacy

LOUIS ZOPF
University of Iowa School of Pharmacy

the carbitol and triethanolamine in the water and likewise heat to 85° C. Add the aqueous solution to the fats with slow agitation. Perfume at about 60° C.

EMULSION GIVES TROUBLE

How can the following prescription be compounded to produce a stable emulsion?

Phenyl salicylate	℥ ii
Creosote carbonate	℥ iv
Syrup sedatole, q. s.	℥ iv

Acacia, q. s. to make emulsion.

—F. S., Texas.

The phenyl salicylate should be dissolved in about 4 ℥ of warm olive oil. Then add the creosote carbonate. Consider this mixture as representing oil in making the emulsion on the 4-2-1 basis. First place one part of acacia in a mortar, add four parts of oil and mix well. Then add two parts of syrup (considered as water) all at once and triturate rapidly and lightly until the primary emulsion is formed. Then gradually add the remainder of the syrup with constant trituration.

ARTIFICIAL COLOR BANNED

We have been making Tincture of Sweet Orange Peel from ordinary oranges, but recently our hospital has been receiving oranges marked "Color Added." Is the peel of this type of orange suitable for the manufacture of the tincture?—M.S., Georgia.

U. S. P. Tincture of Sweet Orange Peel requires the use of official sweet orange peel. This is defined as "the fresh, outer rind of the non-artifically colored, ripe fruit of *Citrus aurantium* Linne var. *sinensis* Linne (Fam. *Rutaceae*)." Use of the oranges marked "Color Added" is therefore not permissible if you wish to prepare the official tincture. Although the FDA certified, nontoxic, coal-tar dyes now used for coloring oranges might not materially affect the final product in the concentration present, the non-artificially colored oranges should be obtained for pharmaceutical use.

COMPOUNDING METHOD GIVEN

Please suggest a satisfactory method of compounding the following prescription?

Spec. med. apocynum	℥ *ii*
Spec. med. viburnum	℥ *ii*
Spec. med. pulsatillae	℥ *i*
Spec. med. gaultheria	℥ *ii*
Spec. med. macrotys	℥ *i*
Tr. nux vomica	℥ *ss*
Aquae dest., q. s.	℥ *iv*

—W. R. K., Texas

Calculate the amount of water necessary to make four ounces and place in a suitable container. Mix the other ingredients together, pour slowly into the water, and stir briskly. It may be that a more elegant preparation can be obtained by adding each of the active ingredients separately to the total amount of water with thorough stirring. As resinous material in the specific tinctures is apt to be thrown down, the preparation may be filtered before dispensing.

A. PH. A. MEMBERSHIP LARGEST IN HISTORY

THE AMERICAN PHARMACEUTICAL ASSOCIATION now has the largest membership in its history. More than 2000 new members enrolled during the 1942–43 ASSOCIATION year, and about 900 additional pharmacists joined since the September meeting.

More than a third of these new members were retail pharmacists, Charles R. Bohrer, the membership chairman, reports. If all present active members who stated their occupation at the time of joining are included, the percentage of retailers is 41.8. This figure does not include the growing number of members in hospital pharmacy.

Since the A. PH. A. student branches were inaugurated in 1930 to encourage professional activities among students, 32 branches have been established in pharmacy colleges. Ten new student branches, as well as one local branch, were established during the past year.

ASSOCIATION records show that among the older members, 244 have joined for life. Nineteen pharmaceutical workers representing 13 countries have been awarded honorary memberships.

FOURTH SUPPLEMENT
to the
NATIONAL FORMULARY
SEVENTH EDITION

I. PERMISSIVE REPLACEMENTS

Lactose, Replacement of in N. F. Preparations

Until further notice a mixture consisting of not less than 96.5 per cent of sucrose and not more than 3.25 per cent of starch may be used as a replacement for Lactose in National Formulary drugs and preparations in which the latter named sugar is specified as an ingredient or diluent.

NOTE: Confectioner's Powdered Sugar meeting General Requirements D-1 and Detail Requirements E-3, type 1 (b) (2) of Federal Specification [(JJJ-S-791A) February 20, 1943, Federal Stock Catalog IV (part 5) Federal Specification for Sugar; Beet or Cane] may be considered as complying with the requirements of a diluent specified above.

The National Formulary drugs and preparations to which this authorization applies are:

Rennin
Powder of Ipecac and Opium
Saccharated Ferrous Carbonate
Saccharated Pepsin

This Fourth Supplement to the National Formulary, Seventh Edition, is issued by action of the Committee on National Formulary, and with the approval of the Council of the AMERICAN PHARMACEUTICAL ASSOCIATION. It is effective from March 1, 1944 until further notice.

JUSTIN L. POWERS, *Chairman*
Committee on National Formulary
American Pharmaceutical Association

Washington, D. C.
March 1, 1944

Reprints of the Fourth Supplement to the National Formulary, Seventh Edition, may be obtained free of charge by sending a large self-addressed, stamped envelope to:

Justin L. Powers, *Chairman*
Committee on National Formulary
American Pharmaceutical Association
2215 Constitution Avenue, N. W.
Washington 7, D. C.

Great quantities of lactose are being used in the production of penicillin, which will result in a shortage of this sugar in 1944. This makes it highly desirable to provide for its replacement in pharmaceutical preparations wherever possible. The above supplement therefore authorizes the replacement of lactose by powdered sucrose in National Formulary preparations. It will be noted that the use of lactose has been made optional rather than mandatory.

Current Views on
COSMETICS AND DERMATITIS

by LOUIS SCHWARTZ

BUREAU OF STATE SERVICES, U. S. PUBLIC HEALTH SERVICE

DERMATOLOGIST DISCUSSES THE PREVENTION OF IRRITANT AND ALLERGIC REACTIONS FROM USE OF BEAUTY AIDS; NEW FORMULAS SHOULD BE CAREFULLY TESTED

COSMETICS have probably been used since history has been recorded. The first authentic records of their use are on papyri found in the tombs of ancient Egypt. The Egyptians used a paste called "kohl" around the eyes. The skin of the lower eyelid was painted green; the upper eyelid brown and the eyelashes black. The face and lips were rouged. The hair was dyed with henna and the palms, nails and soles were also dyed.

Copper ore, lead ore, carbon black, manganese oxide, red mercuric sulfide (cinnabar), red oxide of iron (hematite) were the pigments used in these cosmetics, yet there are no records to show that dermatitis or systemic poisoning occurred as a result of their use.

In the Bible there are many references to cosmetics. It says that Jezebel painted her face and dyed her hair.

The Babylonians used vermilion and white lead as face paints and "kohl" as eye paint.

The ancient Greeks, both men and women, used perfumes and hair ointments. The women dyed their hair and rouged the cheeks and lips.

The Romans were great users of cosmetics and had a full line of them. They had creams to heal blemishes, to remove wrinkles, to soften and give color to the skin. These creams had bases of goose, swan, hen and wool fat; some of the supposedly active ingredients were niter, ammonium chloride, white lead, eggs, stag horn, meerschaum, bone meal and sour wine.

To darken the eyebrows they used antimony sulfide and oxide. They bleached and dyed the hair. They used face rouges and powders, skin whiteners, dentifrices, even false teeth and wigs. So prevalent was the use of cosmetics among the decadent Romans that their stern critics ridiculed it. One of them said "hair and teeth you buy and the face you show the world by day is laid at night into a hundred rouge pots."

While Galen wrote on cosmetics and gave formulas, and Pliny wrote on perfume manufacture, there are no records of dermatitis or systemic poisoning from their use.

The use of cosmetics spread from Italy to France, Spain and England, and their use by women is now universal.

Ancient physicians and writers decried the use of cosmetics because they thought it showed a decadence in women and effeminacy in men and not because of any physical harm that they observed from their use. Ancient physicians were keen observers and that they did not do so, even from the comparatively crude cosmetics of those times with their content of now known to be poissonous chemicals, does not mean that scattered cases did not occur. No doubt they did occur, but they either were not recognized or not reported in medical journals as they are today. It is only because modern physicians recognized and reported cases that we now know how to make harmless cosmetics.

So much more is now known about the action of cosmetics on the skin, and the use of known harmful ingredients is so regulated by law, that outbreaks of dermatitis only occur when new impure, untried or substitute chemicals are used in compounding cosmetics.

Dermatitis from cosmetics may occur:

1. Among workers manufacturing them.
2. Among beauticians.
3. Among the general public.

Strange to say, dermatitis from cosmetics rarely occurs among workers who make them. I have inspected several of our large cosmetic manufacturing plants and have yet to see a case of occupational dermatitis among the workers.

From Dermatoses Section, Division of Industrial Hygiene, Bureau of State Services, U. S. Public Health Service. Presented Scientific Section, Toilet Goods Association, 1944 meeting.

However, among beauty operators, it is a different story. A considerable percentage of such workers develop dermatitis. Hair dressers' eczema may be caused by soaps, tar, oils, hair tonics, hair dyes, hair wavers, hair straighteners, depilatories and cuticle removers. These are cases of occupational dermatitis and can be prevented by the use of rubber gloves.

It is the dermatitis that occurs among the users of cosmetics which concerns us most. Outside of dermatitis from the improper use of depilatories, cuticle removers, perspiration inhibitors, bleaching and freckle creams, hair wavers and straighteners which contain primary skin irritants, the majority of skin injuries among the users of cosmetics belong to the allergic class, and have been caused chiefly by synthetic hair and eyelash dyes, lipstick, nail lacquers, and lately an outbreak from hair lacquer containing a synthetic resin as a substitute for unobtainable shellac.

While cosmetics as a class rank among the safest of substances in so far as producing dermatis is concerned, yet there are occasional outbreaks of dermatitis among the public from new and untried cosmetics. Such outbreaks not only cause suffering but also cost the cosmetic manufacturer considerable money in settling damage suits. Moreover, it makes the public doubt the value of cosmetics and fearful of their use.

The cosmetic industry owes it to the public and to itself to spare no means in order to place only safe cosmetics on sale. This can be done by testing the effects on the skin of new cosmetic

COSMETICS REPORTED TO HAVE CAUSED DERMATITIS

COSMETICS	*CHEMICAL CAUSES*	*TYPE OF DERMATITIS*	*COMPARATIVE FREQUENCY*
Creams	Petrolatum Triethanolamine Methyl heptine carbonate Phenols. Mercurials	Allergic	Rare
Deodorants	Aluminum salts	Primary irritant and sensitizer	Fairly common
Depilatories	Thallium acetate (system. poison)	Primary irritant	Fairly common
Hair wavers, straighteners and lacquers	Alkalis. Resins	Primary irritant and sensitizer	Fairly common
Hair dyes and eyelash dyes	Oxidation dyes, *i.e.* Paraphenylenediamine Paramido phenol Orthoamido phenol Paratoluenediamine Metatoluenediamine	Allergic	Now rare, but frequent when these dyes were first introduced
Lipstick	Dyes, chiefly the eosin group which are photosensitizers. Perfume: methyl heptine carbonate	Allergic	Fairly common
Nail lacquers	Synthetic resins of formaldehyde and ester gum types Dyes, eosin: Rhodamine B and Deep Maroon	Allergic	Fairly common
Perfume	Oil of bergamot Methyl heptine carbonate Synthetic jasmine Linalool. Eugenol. Copper	Allergic	Rare
Powders	Orris root. Dye	Allergic	Rare
Soaps, cleaners, synthetic detergents	Alkalis. Phenols	Defatting action on skin and sensitizer	Fairly common

formulas before placing them on the market. Based on the author's extensive experience in the field, the following procedure is suggested:

Test Suggested

Before placing a new formula on the market closed patch tests should be performed by a competent dermatologist on at least 200 subjects with the new formula, using as a control an old formula which had been on the market for years, and which had caused no unusual number of complaints. The closed patches should remain on for 48 hours after which the reactions should be read each day for three days in order to observe late reactions. The number of reactions obtained from the new formula should not exceed the number obtained from the old.

Ten days after the last reading of the reactions new closed patches of both new and old formulas should be reapplied on the same 200 subjects and allowed to remain on for 48 hours and the reactions again read each day for three days after removal of the patches. If the number of subjects showing sensitization reactions from the new formula exceeds the number showing sensitization reactions from the old formula, the formula is unsafe. These tests will give an idea of the relative skin-irritating and sensitizing properties of the new formula as compared with the old one, but do not give an accurate idea of what may happen under conditions of actual use. Therefore, the following additional tests should be performed:

The same 200 people should actually use the old and the new cosmetic each day on opposite sides of the body for a period of four weeks. If no cases of dermatitis result from the new formula it is safe to place on trial sale. If only one case results then another group of 200 people should be subjected to the actual use test. Only if no cases of dermatitis result among these is it safe to place the cosmetic on trial sale. If more than one case of dermatitis occurs among the first 200 subjects after four weeks of actual use the cosmetic is unsafe.

By trial sale is meant the sale for a period of not less than one month (if no cases of dermatitis are reported before this time) in only one community where between 5000 to 10,000 packages of the cosmetic are to be sold. If no cases of dermatitis are reported during the trial sale then the cosmetic is safe. If cases are reported during the trial sale the maufacturer should employ a competent dermatologist to investigate them and determine the actual cause. The continued sale of the cosmetic or its withdrawal from the market should depend on such an investigation.

If cosmetic manufacturers adopt the trial procedures advised above before placing new cosmetic formulas on the market they will avoid harming the public, the cosmetic industry and its distributing agencies. Those manufacturers of cosmetics who adopt the trial procedures can apprise the public of the fact in their advertising and may increase the sales of their products. They will also have valuable testimony at their disposal to prove that the occasional case of dermatitis which may occur from the use of the cosmetic is due to the peculiar sensitivity of the plaintiff and not to the cosmetic, for there are no substances to which someone may not become hypersensitive.

Summary

1. Cosmetics have been used by all civilizations.

2. If properly prepared and used, cosmetics as a class are harmless and may even be beneficial to the skin.

3. An occasional case of allergic dermatitis from the use of cosmetics cannot be avoided.

4. Outbreaks of dermatitis have occurred from cosmetics which were not properly tested before being placed on sale.

5. A plan for testing new cosmetic formulas before placing them on sale is proposed for the purpose of bringing down to the minimum the number of cases of dermatitis which may occur from their use.

STARCH VEHICLE FOR SULFAS

Although the external use of sulfonamide compounds is now diminishing, Dr. Herman Goodman of New York suggests starch (*Arch. Derm. Syph.*, 49:18, 1944) as an excellent vehicle for use by physicians desiring to prescribe the compounds for local application.

Starch..... 10 Gm.
Water, to make.....100 Gm.

Rub the starch in cold water until smooth; heat with constant stirring until translucent; cool; add the sulfonamide compound and mix.

Druggists' Digest

OF NEW FORMULAS, RECENT PHARMACEUTICAL DEVELOPMENTS, AND OTHER PROFESSIONAL DATA

PHENOTHIAZINE IS EQUALLY EFFICIENT IN SEVERAL FORMS

Phenothiazine has become popular as an anthelmintic for certain intestinal nematodes in sheep, but because of its bulk and insolubility in water many forms of administration have been tried. In an attempt to determine the most practical and efficient method of administration, Drs. W. M. Thorning, Jesse Sampson and Robert Graham, of the University of Illinois Department of Animal Pathology and Hygiene, obtained comparative data on the use of phenothiazine given as a capsule, bolus, aqueous suspension, molasses suspension, and feed pellets.

They report (*J. Am. Vet. Med. Assoc.*, 104: 67, 1944) that no significant difference between the treated groups of lambs was observed, although the work provides further evidence that phenothiazine is effective. There was an average of 88.3% reduction of Strongylid ova in the feces of the five treated groups compared with 13.3% reduction in a control group. The term "Strongylid" includes Haemonchus spp., Oesophagostomum spp., Cooperia spp., Trichostrongylus spp. and Ostertagia spp.

The numbers of Trichuris and Strongyloides ova were not influenced by any form of treatment. Nematodirus infestations were not significantly affected, but the number of cases was so small as to make conclusions unwarranted.

Phenothiazine was administered in the tests as follows:

1. Single dose of powder in gelatine capsule, 15 Gm. as recommended in N. F. VII for lambs weighing up to 60 lb.

2. Single dose of 12.5 Gm. in bolus. Although a commercial product was used in the tests, Dr. W. E. Swales has suggested the use of a disintegrating bolus which can be prepared for veterinarians by the following formula:

Phenothiazine, commercial.....	80 parts
Starch.....	8 parts
Sodium bicarbonate.....	5 parts
Tartaric acid.....	4 parts
Sodium choleate.....	2 parts
Phenolphthalein, U. S. P.....	1 part

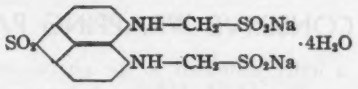
3. Single dose, 12 Gm. in 1 f℥ aqueous colloidal suspension as drench.

4. Single dose, 15 Gm. in 2 f℥ water-molasses suspension as drench. The phenothiazine is mixed with blackstrap molasses, then an equal volume of water added.

5. Dose of 13.5 Gm. incorporated in pellets containing 5% mineral, 6% molasses and 89% soybean-oil meal.

CHEMISTRY OF NEW COMPOUND FOR TUBERCULOSIS TREATMENT

Diasone, the chemical now being given clinical trial for the treatment of tuberculosis, is 20 times less toxic for mice and 7 times less toxic for rabbits than its parent compound, 4,4'-diaminodiphenylsulfone. The toxicity of the sulfone compound is reduced by reaction with sodium formaldehyde sulfoxylate to form diasone, which has the following formula:



The product which comes out of the reaction mixture represents 92–93% of the substance corresponding to the above formula, as indicated by analytical tests.

The chemical properties and synthesis of the product are reported (*J. Am. Pharm. Assoc., Scien. Ed.*, 33: 43, 1944) by Drs. G. W. Raiziss, L. W. Clemence and M. Freifelder, of Abbott Dermatological Research Laboratories, who first

prepared and described diasone. An analogous product was prepared simultaneously and independently, however, by Rosenthal and Bauer.

Diasone is water soluble, the Abbott workers state, provided that it is stored in glass ampuls which have been sealed under high vacuum. If exposed to air for several days part of the powder becomes insoluble. By first mixing the powder with sodium bicarbonate, however, it remains unchanged and soluble for several months.

Exposed to the action of hydrochloric acid, acetic acid, carbon dioxide or alkali under specified conditions, diasone retains its identity. That the combination of diaminodiphenylsulfone and sodium formaldehyde sulfoxylate is a firm one that will not be split into toxic products by various physiological agents is further shown by its chemotherapeutic behavior as contrasted with the behavior of sulfone.

SILVER PICRATE IS SUCCESSFUL IN TREATING BOVINE VAGINITIS

Use of silver picrate for treating vaginitis in humans has now been extended to veterinary practice. Capt. George C. Folger, V.C. reports (*J. Am. Vet. Med. Assoc.*, 104: 73, 1944) that 1% silver picrate dispersed in kaolin (available as compound silver picrate powder from John Wyeth and Bro.) alleviates granular or trichomonas vaginitis in heifers and cows sufficiently to permit conception. Using a Shelanski insufflator, 5 Gm. of the preparation was insufflated into the vagina every other day for a maximum of three treatments.

The main interest in the treatment of vaginitis in cows centers about the fact that 50% to 70% of those infected become sterile. Within two months after treatment, the report states, some cows conceived that had been unsuccessfully bred as many as five times. In some cases where cows seemed to abort during the first month, a course of silver picrate insufflations apparently maintained pregnancy. No untoward effects were observed in any case. The treatment is without pain and does not require douching.

COLD VACCINE EFFECTIVENESS QUESTIONED IN LATEST STUDY

Widespread use of present cold vaccines does not seem to be the answer to the problem of absenteeism due to acute respiratory infections. Indiscriminate administration of cold vaccines, both oral and parenteral, has led to numerous studies but results have varied widely. The most recent report (*J. Am. Med. Assoc.*, 124: 555, 1944) confirms general medical opinion that the effectiveness of cold vaccines is being much overrated by many.

In a study by Drs. L. C. McGee, J. E. Andes, C. A. Plume and S. H. Hinton of the Hercules Powder Company's Medical Department, "no clearly evident protection" could be discerned from mass immunization of industrial and office workers. Stock preparations of three oral and two parenteral cold vaccines were used in the tests. A group receiving only placebos and an untreated group were included as controls.

Neither the frequency nor severity of common colds, including complications, seemed to be significantly affected by the use of any of the vaccines.

In criticizing reports that indicate some degree of protection can be obtained from the use of cold vaccines, the physicians maintain that the evidence presented is "for the most part unimpressive, incomplete and poorly documented."

CONSERVE WRAPPING PAPER, WPB ASKS; SUPPLY CUT 50%

In a letter addressed to the pharmacists of America, Donald M. Nelson, chairman of the War Production Board, requests the greatest possible conservation of wrapping paper, as production for civilian use will need to be cut more than 50%:

"Tremendous war requirements such as packing overseas shipments of military supplies, plus inadequate manpower for cutting pulpwood, have made our paper supply the most serious material shortage today.

"Druggists can be of great help by adopting a few simple measures such as the following:

1. Don't use paper or bags for merchandise already packaged or in a box, bottle, jar or can.
2. Ask customers to accept small items unwrapped.
3. Don't use large size wrapping paper for a small package.
4. Urge customers to bring their own shopping bags and to re-use all paper bags previously furnished."

ANOTHER HEALTH PLAN PROPOSED

PHARMACY as well as medicine would be included in the British national health insurance plan discussed by Dr. Raymond Green, chairman of the Aylesbury Medical Planning Group, in the *British Medical Journal*.

"Ultimate control of the health of the people is a matter for the people themselves," Dr. Green states, "and must therefore be controlled by Parliament and not by doctors or by any medical organization."

It is believed that communal health can only be assured, however, if the medical profession is contented with its terms of service. A form of central control is therefore proposed. As the British Ministry of Health has not been considered satisfactory by the British medical group, an alternate method with central control organized as a semi-autonomous government National Board of Health is suggested.

Its functions would be the control of British medical policy and the control of all medical funds. The actual health administrations—hospital management, preventive medicine and treatment of the sick—would be controlled completely by regional councils, largely autonomous, but financed by the National Board of Health. Advisory councils for the National Board would be elected from the medical profession for a five-year term.

Speaking of the Pharmaceutical Council proposed in this plan, Dr. Green says: "The time is clearly approaching when the high standard of knowledge now required of highly qualified pharmaceutical chemists will entail an improvement in their status. The chemist's shop as we know it today would disappear and be replaced by something very nearly approaching the American drug store—a shop for the sale of toilet articles, cosmetics, photographic materials, soft drinks, etc., and any other article at the whim of the owner. Drugs required for medical purposes would be obtained from dispensaries attached to the various hospitals and health centers. These dispensaries would be managed by pharmaceutical chemists, who would be recognized by doctors as their colleagues and would cease to be the usual hybrid of shopkeeper and unqualified practitioner. The council which would control them and watch their interests would be elected by pharmacists on a regional basis and would contain also a number of scientific pharmacologists."

This type of organization, it is claimed, could be applied to a variety of schemes aimed at the improvement and maintenance of national health. In the Aylesbury plan the dispensaries would be attached to group health centers under control of the National Board of Health but governed by the doctors who formed their staffs.

An advantage of this plan, as cited by Dr. Green, is that a unified plan for the whole country would be provided "under the control of Parliament but with the minimum of interference with the personal freedom of the doctor, who would be controlled (if so strong a word is applicable to so light a rein) by his own elected colleagues and not by anonymous officials."

Drugstore Rules, 1854

"Store will be opened promptly at 6 a.m. and remain open until 9 p.m. the year around. Store must not be opened on the Sabbath day unless absolutely necessary and then only for a few minutes.

"Any employe who is in the habit of smoking Spanish cigars, getting shaved at a barber shop, going to dances and other places of amusement, will most surely give his employer reason to suspect his integrity and all-around honesty.

"Each employe must attend Sunday school every Sunday. Man employes are given one evening a week for courting purposes, and two if they go to prayer meeting regularly. After 14 hours of work in the store, the remaining leisure time must be spend in reading good literature."

[As reprinted by Gilman Bros., Boston]

PHARMACY LOSES FOUR LEADERS

FOUR GREAT PHARMACISTS WHO CHAMPIONED A. PH. A. OBJECTIVES DIE WITHIN FOUR MONTH PERIOD

WITHIN four months, pharmacy and the AMERICAN PHARMACEUTICAL ASSOCIATION have lost four of their great leaders—Henry V. Arny, Samuel L. Hilton, Robert S. Lehman, David F. Jones. All are names familiar to the nation's pharmacists. Their lives ended at a critical time in American pharmacy, but their achievements live on to guide the younger men who now shoulder their tasks.

The most recent death was that of D. F. Jones of Watertown, South Dakota. He was born in 1869 and reared on a farm near Sparta, Wisconsin. After graduation with honors in pharmacy from Northwestern University in 1894, Mr. Jones took up a teaching post in the pharmacy department at South Dakota State College. Later he purchased the Marshall Drug Company in nearby Watertown and devoted much of the remainder of his life to practice in his ethical pharmacy. His interests led him to join the AMERICAN PHARMACEUTICAL ASSOCIATION while still a young man; he remained an active member during his entire life. He held many offices, including the presidency in 1928–1929.

Years before, he had been one of the committee of three who outlined and established the National Association of Boards of Pharmacy. Mr. Jones served several times as a delegate to the Pharmacopœial Convention and was prominent in the work of the Drug Standards Commission. For many years he served on the South Dakota Board of Pharmacy, and was president of the state association.

In recognition of his life's devotion to the "intellectual, scientific and professional advancement of the state," the University of South Dakota conferred upon him, in 1927, the honorary degree of Doctor of Science.

On February 10, 1944, D. F. Jones died.

Only a few days before, one of his colleagues, Samuel L. Hilton died in Washington, D. C., after a life span of 78 years. Several of the country's presidents, and many of the great and near great, were his patrons during the 54 years he practiced in the nation's capital. His pharmacy had an air of a Dickens apothecary shop.

Born and reared in Washington, Mr. Hilton graduated from the old National College of Pharmacy as valedictorian of his class. Although he opened his pharmacy the following year, he devoted part of his time for five years to teaching analytical chemistry at his alma mater. In more recent years he served as lecturer on professional pharmacy at the college, which merged with George Washington University two decades ago.

Mr. Hilton was a life member of the AMERICAN PHARMACEUTICAL ASSOCIATION and devoted much of his time to the promotion of professional pharmacy through its activities. It was he who first inaugurated the movement to establish the AMERICAN INSTITUTE OF PHARMACY, which has been the headquarters of A. PH. A. since 1935. He held many offices in the ASSOCIATION during his lifetime and was president in 1921–1922. He was also president of the District of Columbia Retail Druggists Association, president of the District of Columbia Veteran Druggists' Association, and member of the Board of Pharmacy for more than eight years.

Since the turn of the century, Mr. Hilton had been a delegate to the Pharmacopœial Convention and served as a member of the Committee on National Formulary since 1890. For 30 years he was treasurer of the Pharmacopœial Convention.

His interests extended to many organizations and activities. An alumni achievement award was given him by George Washington University. In 1935 the New York branch of A. PH. A. expressed the admiration of the nation's pharmacists and honored his works by awarding Mr. Hilton the Remington medal.

Death came on January 30, 1944.

The third great pharmacist to which the ASSOCIATION pays tribute is the late Robert S. Lehman. He was born in Brooklyn on April 24, 1867. After attending several schools in Brooklyn, he started his apprenticeship at Leinecke's Pharmacy in New York; later he worked in Staebles Pharmacy, Newark, N. J. In 1900 he opened an ethical pharmacy in partnership with his brother in New York, where he continued to practice until his retirement in 1923.

Mr. Lehman did not retire from active participation in pharmaceutical affairs, however. For 30 years he was a prominent figure at national and state meetings, holding many offices and committee chairmanships. He served as president of the New York State Pharmaceutical Association, president of the New York Pharmaceutical Council, president of the New York Academy of Pharmacy, and as secretary of the New York State Pharmaceutical Association. He was a charter member of the New York Veteran Druggists' Association.

For more than 30 years Mr. Lehman was active in the AMERICAN PHARMACEUTICAL ASSOCIATION. An announcement of his election as second vice-president of the ASSOCIATION arrived only a few hours after his death on January 15, 1944.

American pharmacy will long remember the name and benefit by the works, of Henry V. Arny. Although born in Philadelphia in 1868, Dr. Arny's early life was spent in New Orleans. Returning to Philadelphia to study pharmacy, he graduated with distinction from the Philadelphia College of Pharmacy in 1889.

After practicing for a time in New Orleans, Dr. Arny journeyed to Europe to continue his studies at the University of Berlin and the University of Göttingen. He received his Doctor of Philosophy *magna cum laude*.

Upon his return to the United States, Dr. Arny took up a professorial post at the School of Pharmacy, Western Reserve University. Later he became dean. In 1911 he accepted the professorship of pharmaceutical chemistry at the New York College of Pharmacy, Columbia University, and was dean from 1930 until his retirement in 1937.

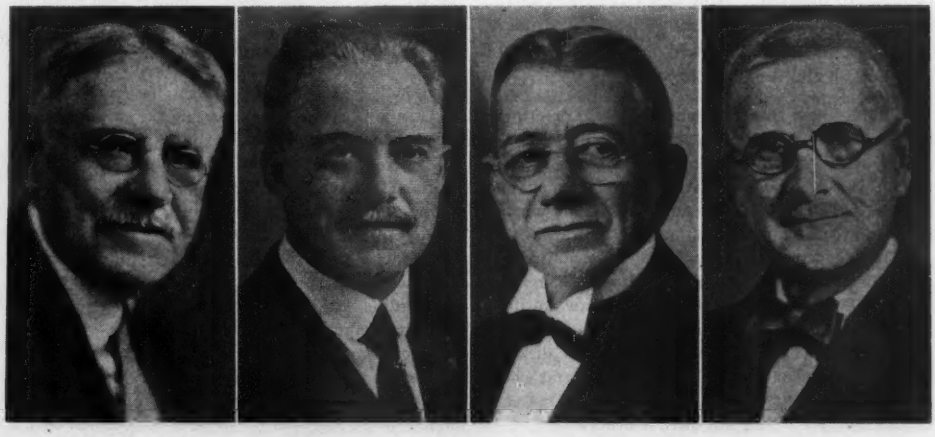
Dr. Arny's contributions to pharmaceutical literature were varied and extensive. He was author of the widely used textbook, *Principles of Pharmacy*. He was on the staff of several pharmaceutical publications. He was editor of the *Yearbook of the American Pharmaceutical Association* from 1916–1922.

A life member of the ASSOCIATION, Dr. Arny served as its president for the 1924–1925 term. He was also president of the American Conference of Pharmaceutical Faculties, a member of the executive committee of the American Metric Association, and chairman of the National Conference on Pharmaceutical Research. Dr. Arny served on both the Revision Committee of the Pharmacopœia and the Committee on National Formulary.

In 1922 he was awarded the Remington medal for his outstanding service to pharmacy, and received the Ebert medal in 1926.

H. V. Arny died on November 3, 1943.

Thus, in less than four months, four great American pharmacists have left the ranks of the profession. Seldom, if ever, has pharmacy lost such a wealth of ability and professional knowledge in such a short span of time. What Arny, Lehman, Jones and Hilton accomplished remains with us as their most fitting memorial.



H. V. ARNY R. S. LEHMAN S. L. HILTON D. F. JONES

bilities to the A. Ph. A. and to the profession which it represents.

"Any hurried withdrawals from college at this time would indicate a lack of stability on the part of pharmacy students, which is not thought of as being characteristic of educated men. Let's stay by the ship!"

Despite wartime problems the number of A. Ph. A. branches has so far continued to grow, and reports to THIS JOURNAL show active programs. The most recent addition to the roster is the Northwestern Ohio branch with 23 charter members enrolled to date. Officers elected at the first meeting are Walding Rupp, president; C. R. Brandt, vice-president; and Bess G. Emch, secretary.

At the initial meeting of the newly organized branch at the Philadelphia College of Pharmacy and Science, Donald Davies was named to head the activities. Other officers are Dominick Salerno, vice-president; William Streeter, secretary; and Robert Peil, treasurer. At a subsequent meeting in February, Dr. Ralph Clark of Merck and Company addressed the group on "Wartime Pharmacy."

The new officers at the "Ole Miss" student branch put on the February program. Lewis Nobles discussed the effect of global war on drug supplies; C. L. Deaton and Bill Rose, Jr., discussed malaria, quinine and other antimalarials; and James P. Holloway spoke on penicillin. A paper by Jose Caussede was presented for him in his absence.

Student branch members at the State College of Washington recently heard Ronald Robertson, an alumnus, discuss students' responsibilities for participating in their democratic government. Legislation was discussed, including the pending bill, S. 1161, which contains a provision to extend Social Security to include medical care. Mr. Robertson's address also pointed out some fundamentals in ethics for the practice of pharmacy. At the January meeting the Washington branch saw three films on pharmaceutical subjects.

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There was also a discussion of plans for continuing the award of a scholarship plaque by the branch.

About 50 A. Ph. A. members braved bad weather to attend the joint meeting of the local branch of Western New York and the student branch of the University of Buffalo. Pharmaceutical economics was discussed by I. H. Bander of McKesson and Robbins, who was the principal speaker. Methods of business control were presented whereby a pharmacy proprietor can adjust to the cyclic rise and fall of distribution volume.

At the meeting of the Ferris Institute branch, Dick Coward, program chairman, addressed the group on the "Origin of A. Ph. A." Establishment of a biweekly or monthly paper by the branch was thoroughly discussed later in the meeting, and publication plans were agreed upon. Helen Gettings was appointed editor. The paper will be sent free to all Ferris students in the armed forces. Graduating seniors each contributed one dollar to help promote the publication. On February 6 the branch gave a dinner and theater party as a farewell to the seniors.

Members at the February meeting of the New York local branch heard Carlton Fredericks, nu-

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PHARMACISTS STUDY NIGHTSHADE TOXICITY

Pharmacists have long been familiar with the potent and valuable action of *Atropa belladonna*, or deadly nightshade, but toxicity of other nightshade species now interests pharmacy researchers at the School of Pharmacy, State College of Washington.

Nightshade berries have become a serious contaminant of peas in American canneries. So Dr. Coy W. Waller and his associates have set out to determine whether the various *Solanum* species deserve the bad reputation which has led the Food and Drug Administration to ban the sale of peas thus accidentally adulterated.

Reporting in the journal, *Science* (99: 80, 1944), Dr. Waller states that work to date has proved the toxicity of three-flowered nightshade (*S. triflorum*). Solanidine has been found by qualitative test in yellow nightshade (*S. nigrum* var. *villosum*), indicating that it is also toxic. Black nightshade (*S. nigrum*) is already known to contain poisonous solanine. Data on the amount of toxic substances present in the species will be reported later.

All three plants grow in the Inland Empire, an area covering eastern Washington, northern Idaho and extreme northeastern Oregon.

A. Ph. A. Branches

PLAN TO MEET WARTIME PROBLEMS

BRANCH PROGRAMS HELPFUL TO PHARMACISTS, REPORTS SHOW; COMMITTEE CHAIRMAN OFFERS SUGGESTIONS TO MEMBERS FOR MEETING CHANGED CONDITIONS

BECAUSE of the uncertainties and problems which recent Selective Service regulations have brought to pharmacy students, Dr. Ernest Little, chairman of the Committee on Local and Student Branches, sends the following message to student members of the ASSOCIATION:

"We all know that the new rulings on deferment of pharmacy students can mean but one thing—greatly reduced enrollments in our colleges of pharmacy. It is even possible that some colleges may find it necessary to close for the duration, others may be in more favorable positions.

"The suggestion which I wish to make and urge is that all of us, students and faculty alike, remain where we are, doing the best job we can do, until we are called for other service. We should never lose sight of the fact that we are all at the disposal of our government and can be used when and where it believes we can best do our bit. This is as it should be. We would not have it otherwise.

"The desire to do our part is strong in every one of us, but we must fight against letting our enthusiasms get the best of our good judgment. I hope pharmacy students will remain in college until such time as they are told by Selective Service that they should be elsewhere. Persons close to the war effort know where the greatest needs are, better than we do, and they know where we can best fit into the war machine. So again I urge, stay where you are and do your best until you are called to military service.

"We do not want to be pessimists or defeatists, but we must be realists and not refuse to look facts in the face. In this spirit I suggest that if enrollment in your college reaches such a low ebb that it seems your branch can no longer carry on, try to see to it that it does not pass out of existence. In such instances it would be well to have incorporated in the minutes of the last meeting the statement that the branch is not disbanding but is merely suspending operations until more favorable conditions make it possible to again resume operation under its existing constitution and bylaws. If such action should prove necessary, please write to Dr. Kelly or Mr. Bohrer in Washington, D. C., telling them that the section is suspending operations but will resume again at a later date. Such an arrangement will greatly facilitate matters and make for greater efficiency later on.

"In the meantime continue to plan your programs and meetings with confidence and courage. There is much to be done and it can be accomplished only if each one of us measures up to his individual respon-

CONTENTS: Pharmaceutical and hospital formulas, Formulas for diabetics, Dental formulas, Podiatry formulas, Veterinary formulas, Cosmetic formulas, Formulas for flavoring extracts, Technical and miscellaneous formulas, Table of certified coal tar dyes, Table of average doses of unofficial drugs, Schedule of poison antidotes, Table of solubilities, Guide to percentage solutions, Glossary of synonyms, Table of Latin terms and abbreviations, and Vitamin synopsis.

RECIPE BOOK

Busy pharmacists left on the home front to provide essential public health services need complete pharmaceutical information at their fingertips. The Third Edition of the Pharmaceutical Recipe Book brings together a veritable storehouse of information between the covers of one book. Although completely revised and brought up to date, it retains the popular formulas of yesteryear often used by the aging or retired physicians that must now shoulder much of the medical practice. Hospital formulas prescribed in private practice, dental preparations, veterinary products, tables of solubilities, percentage solutions—all are "just what the doctor ordered" to meet quickly today's demands. Individualized products that enhance service and reputation can be prepared for the coming summer season from the formulas for insecticides, suntan preparations, antipruritic lotions and foot powders. As a year round time and money saver, pharmacists are buying the Pharmaceutical Recipe Book.

Order your copy at once. Price $5.00 a copy. (Dues paid active members of the American Pharmaceutical Association may purchase the Recipe Book at $3.50 a copy if they place their orders through the Association's offices, 2215 Constitution Ave., Washington, D. C.)

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ASCORBIC ACID POWDER

actual practice of techniques will be practical and helpful.

An added incentive for postmeeting discussions is the serving of light refreshments. Several branches have found that this practice helps the members to become better acquainted and makes the meetings more congenial.

PHARMACIST'S STATUS RAISED IN VETERANS ADMINISTRATION

The position of Chief Pharmacist has been created in the Veterans Administration which will, for the first time, enable pharmacists to obtain a P-2 rating at $2000 to $3200 per year. In institutions where there is one Pharmacist and two or more Pharmacist's Assistants, the practitioner with the rating of Pharmacist will be promoted to the P-2 grade. This rating will be attained primarily through promotion of key personnel in the lower grade.

Other pharmacists employed in the facilities of the Veterans Administration are rated as Pharmacist, P-1, at $2000 to $2600 per year or as Pharmacist's Assistant, SP-4, at $1620 to $1920.

At present 120 or more pharmacists, male and female, are employed in the Veterans Administration. This number will be increased as expansion and necessity demand. Pharmacists interested in hospital pharmacy positions should apply to the Director of Personnel, Veterans Administration, Washington 25, D. C.

CONSERVATION OF NARCOTICS

Most pharmacists are cooperating with the Bureau of Narcotics in restricting counter sales of exempt preparations to not more than two ounces, Commissioner H. J. Anslinger reports.

Manufacturers and wholesalers are therefore being requested to cooperate, as retail pharmacists have done, by producing and stocking only the smaller size consumer packages.

Pharmaceutical organizations have endorsed the move as an important means of conserving critical and strategic narcotic medicines. The distribution of more than two ounces of exempt narcotics at a time to consumers has been found to be excessive in the great majority of cases.

Proof from the laboratory

THERE IS A DIFFERENCE IN VITAMIN B SOURCES

The Beta-Concemin formula is based on a special fraction of liver rich in whole vitamin B complex as found in this complete source . . . adjusted with crystalline B vitamins to assure adequate intake of those factors of known importance in human nutrition.

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Beta-Concemin is available in Elixir, Tablets, and Capsules with Ferrous Sulfate.

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MERRELL

THE WM. S. MERRELL COMPANY CINCINNATI U.S.A.

trition consultant and network broadcaster, speak on "Vitamins, Victuals and Victory." Tribute was paid during the meeting to the late Robert S. Lehman, pharmaceutical leader.

New officers announced by the University of California branch are Joe Colla, president; Beatrice Ross, vice-president; and Peggy Ting, secretary and treasurer.

At Fordham the student members elected the following officers: Edward Homenick, president; Albert Meyer, vice-president; Robert Magliari, treasurer, and William Diamantis, secretary. At a combined February meeting with the college's Academy of Science, the members heard Dr. Charles Church discuss penicillin.

Cooperation between neighborly local and student branches, as typified by the joint meetings, is commended by Dr. Little as a means of strengthening branch activities during the difficult period ahead and of promoting the ASSOCIATION'S efforts for a continuing advancement of professional pharmacy in America.

Some discussion topics that should help to produce successful meetings are suggested by Chairman Little:

1. *Antimalarials*—Much research is being devoted to this subject since malaria has become an important enemy of the armed forces. Pharmacy and all public health agencies must be ready to help prevent the spread of this disease in our own country after the war.

2. *Vitamins*—Constant study is needed to keep up with this rapidly advancing field and to be able to recognize the misinformation abroad on the subject.

3. *Endocrinology*—Products in this field will be of increasing importance in pharmaceutical practice.

4. *Dental Pharmacy*—More cooperation between pharmacists and dentists will be of benefit to patients and to the mutual advantage of the professions.

5. *First Aid*—Pharmacists are better informed on this subject than ever before, but a review with

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